step 3; locating all the blinking spots on the said die or the said wafer;

step 4; observing the temperature response of the blinking induced by the said pulsing input to the said blinking spots;

step 5; eliminating those blinkings that do not change as the ambient temperature rises below the phase transition temperature;

step 6; identifying those blinking spots that increased in blinking size as the ambient temperature rises; the said blinking spots recited in said step 6 are the hot spots.

ABSTRACT

This improvement is the process of using a few well collimated and even radiative heating lights to heat up the liquid crystal film, which is spread over the surface of the die of an integrated circuit. The radiative heating of the liquid crystal film from the top helps to form an even temperature profile on the liquid temperature film. The rapid time response of the heating filament temperature and the radiative heating process induces a rapid response in the liquid crystal film temperature. ~~The process of allowing the temperature of the liquid crystal temperature to rise and drop,~~ the liquid crystal film temperature is brought to infinesimally close below to the liquid crystal phase transition temperature, for a limited length of time. During this limited length of time, a small ohmic heating dissipated from the die into the liquid crystal film would induce a localized phase transition in the liquid crystal film. Under a cross polarized light, the nematic liquid phase transition process exhibit a change in the liquid crystal's

transparency and colors . The transition process is most easily visible when the die is periodically dissipating heat into the liquid crystal film at a 1.2 Hz and at 50% duty cycle. At this periodic heat dissipating mode, the periodic phase transistion induces a blinking appearance at the region where the phase transition is taking place. This periodic ohmic heating is accompanied with periodic voltage change in the die. The voltage changes will induce a blinking appearance similar ~~as the low powered ohmic heating induced~~ to the hot spot induced blinking. With the use ~~of a variation of the ambient~~ temperature of the liquid crystal film ~~the size of the heat induced~~ blinking increases ~~as the temperature increases. The size~~ of the voltage induced blinking does not respond to temperature changes, as long as the liquid crystal's temperature is not ~~crossing a~~ beyond the phase transition temperature. Thus, the varied heating light provide a means to differentiate the two types of blinkings.